

Developing Information Systems Careers (DISC)

Program Description

The Developing Information Systems Careers (DISC) program targeted post-secondary students to improve both the applicant pool and the retention rate of information technology (IT) personnel at Los Alamos National Laboratory. DISC was developed to focus on the critical skill area of computing (computer support) for Los Alamos National Laboratory-Defense Programs missions in alignment with the Chiles Report. Upper level high school and undergraduate level students who demonstrated a desire and interest in the computing world were inducted into the Laboratory work force through internships and apprenticeships that lead to employment opportunities. Specifically, DISC addressed how to attract and induct people into the IT field, how to train them for the rapidly growing and advancing market, and how to support and retain them as Laboratory employees, once they are hired.

Program costs in FY01 were reduced through the development of collaborations with individual line organizations. Ninety percent of the student costs were borne by the line organizations. In addition, several Laboratory computing groups including Scientific Software Engineering (CCN-12), Desktop Group (CCN-2), and Customer Service (IM-2) provided technical speakers for student seminars. Ongoing efforts to recruit mentors and sponsoring organizations are continuing to build a strong network for the future. Through these efforts, a Laboratory principal investigator (PI) was identified, and development of the FY02 DISC proposal was completed. In addition, these efforts located other potential Laboratory PIs for the development of future proposals in the critical skill areas of high-energy fusion and high-performance computing.

Performance Objective and Milestones

The DISC program was designed to (1) develop a diverse pool of candidates with computer skills to assist the Laboratory in building a talented work force to meet current and future needs, (2) increase student understanding and use of technology for telecommunications and research purposes, and (3) demonstrate how to solve simple to complex problems related to computer

support efforts. Recruitment for the program focused on graduating high school students planning to attend two- or four-year colleges throughout northern New Mexico. Participants were selected based on their interest and aptitudes in IT work.

FY01 Milestones

- Due to collaborative recruiting efforts with various LANL line organizations, thirty-three students were placed in computer science positions at the Laboratory during this past summer.
- Two students were placed in March and the remainder started in late May and early June.
- Students were introduced to life/work at the Laboratory through student orientation sessions held in June.
- Students were offered opportunities to learn about the computing world at LANL through seminars coordinated by the Education Program Office (EPO). Speakers included Robert Judd (CCN-12), William Robertson (IM-2), and Ben Martinez (CCN-2).
- One student was hired on permanently as a technical employee in the Communications and External Relations Division at the end of his summer internship program.
- Multiple students learned to use the Internet/

Intranet to obtain information for projects.

- One student took the initiative to obtain additional training in computer related courses.
- Students report that they have learned how to identify and solve complex problems.

The DISC program supported the Laboratory in the thirteen identified critical skill areas in the following ways:

- Sponsoring organizations received a continuum of high-quality computer technicians and computer science students who were motivated and able to contribute to the Laboratory's mission and program objectives.
- Students were matched with specific organizational needs and requirements.
- A population of New Mexico students was actively recruited and placed in the Laboratory's workforce pipeline.
- The program provided the Laboratory with the means to meet UC contract requirements to interact with local and regional communities.
- The program established a win-win relationship with students and line organizations.

Highlights of This Year's Accomplishments

Funding was made available in mid-February and active planning and recruiting began in late

February. A Laboratory PI, Dale Land, was identified to develop a DISC related proposal for FY02.

Student assignments focused on organizational requirements, the Laboratory's mission, and the critical skills areas. The students work assignments included computer system analysis, maintaining and troubleshooting computers and computer networks, desktop support, server support, computer network configuration, computer upgrades, computer security, hardware and software installations and configurations, systems and network administration, using test equipment, and conducting hardware diagnosis (Figs. 4 and 5). All students were assigned LANL mentors.

Demographics

Table 1 and Charts 2 and 3 represent the breakdown of the participants by gender and ethnicity.

Lessons Learned

Based on informal conversations with both students and mentors, a number of areas were identified that can be strengthened. These include more seminar workshops beginning in June, more social events, the need for workshops with mentors, and the need for working with local institutions of higher learning in recruiting.



Figure 4. Carlos Martinez, STB/EPO.



Figure 5. Melissa Dubriel, HR T&D.

Table 1. DISC Gender and Ethnicity

Student Gender Breakdown:	Total	100%		
Male	23	69.7%		
Female	10	30.3%		
Student Ethnicity Breakdown:	Afr-Am	Cauc	Hisp-Am	Native-Am
Male	0	10	13	0
Female	1	1	8	0
Percentages	3.0%	33.3%	63.6%	

These findings have led to the pursuit of a number of ongoing solutions. Efforts to identify sponsoring organizations and to identify effective mentors were started and are continuing for next year. Planning for recruiting and placement efforts are also underway for next year to ensure effective transition to implementation when funding is approved. Plans are being developed that will assist sponsoring line organizations in developing meaningful work experiences that capitalize on the student's knowledge and previous experiences. A collaborative effort is underway with the Education Program Office Student Program Liaison coordinator to develop a mentor workshop and support plan. Additional

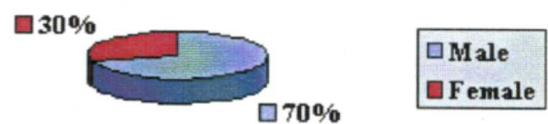


Chart 2. Participants by gender.

collaboration efforts are underway with the GRA (graduate student program) and UGS (undergraduate student program) coordinators to develop an enhanced student support system to improve the student's work and social environment, an important element in recruiting and retention efforts.

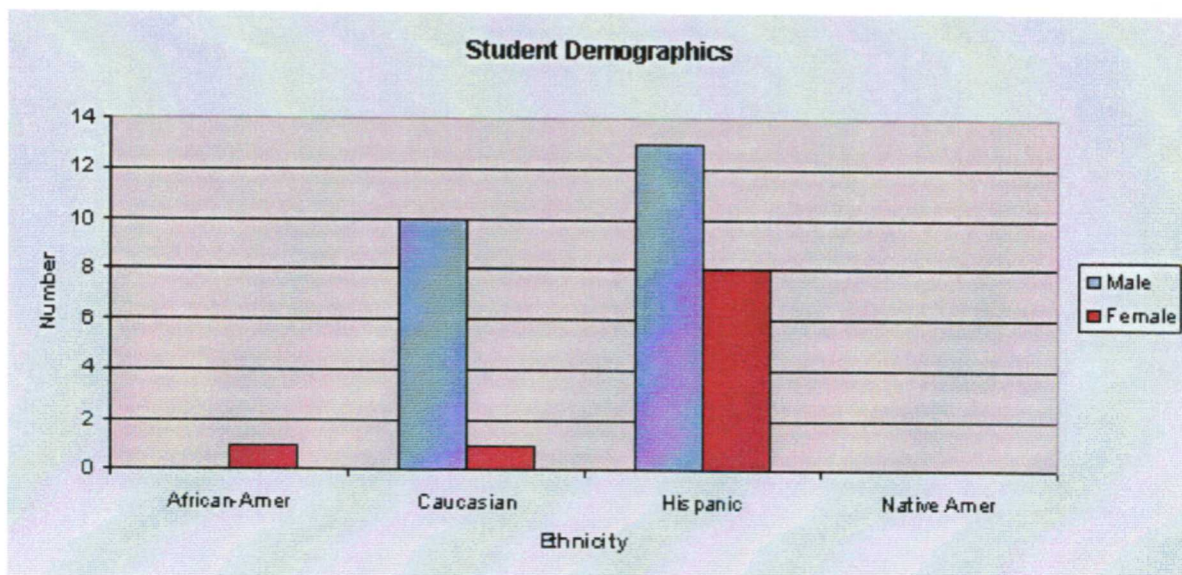


Chart 3. Ethnic representation.

Survey Results

An anonymous survey administered in mid-August captured the following responses from both mentors and students.

Comments from Mentors

"The time involved (with mentoring my student) was well worth it when she expressed a heartfelt gratitude for what I had done for her during the summer."

"Never in my life did I expect such enthusiasm to come from a person so young."

"I had to curb (his) efforts to go beyond his assigned tasks. I felt that he needed to slow down and fully understand what we were doing. In the end he began to realize that we had to impose certain limits on what we can and cannot do here."

"Once she knew what our expectations were, she not only met them, she exceeded them."

"I'm not sure this is the type of job he should be pursuing, but if he wants to return next year I'd be more than happy to have him back. He was a great worker."

Comments from Students

"I learned a lot this summer. I didn't know there was so much to working with computers."

"It was fun but I think next year I will try to get a job doing programming."

"I didn't know they did so much up here. It's kind of neat to say that I was working here."

"Working here this summer really helped me understand my college classes better."

"It exposed me to a lot of things going on around the Laboratory."

"I thought it was pretty interesting to see the work the Laboratory did."